

**DEPARTMENT OF TRANSPORTATION**  
 DIVISION OF ENGINEERING SERVICES  
 Office of Structural Materials  
 Quality Assurance and Source Inspection



Bay Area Branch  
 690 Walnut Ave. St. 150  
 Vallejo, CA 94592-1133  
 (707) 649-5453  
 (707) 649-5493

Contract #: 04-0120F4  
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
 File #: 69.25B

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

**Location:** Changxing Island, Shanghai, PRC

**Report No:** NCR-000260

**Prime Contractor:** American Bridge/Fluor Enterprises, a JV

**Date:** 04-May-2009

**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

**NCR #:** ZPMC-0234

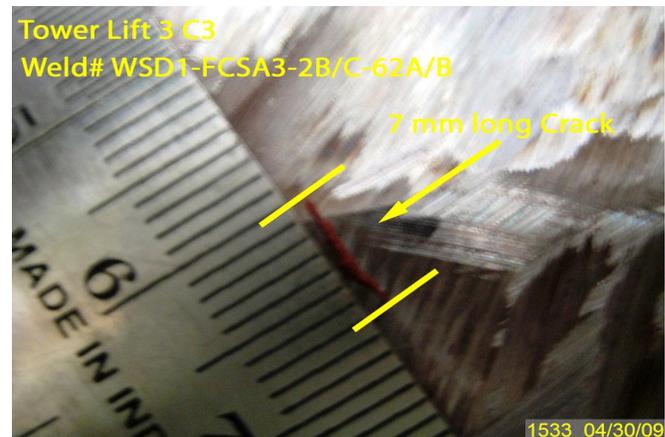
### Type of problem:

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b> West Shaft, Lift 3, Skin C
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> West Shaft, Lift 3, Skin C; Missed MT indication	

**Reference Description:** West Shaft, Lift 3, Skin C; Missed MT indication

### Description of Non-Conformance:

QA discovered a 7mm long linear indication in weld WSD1-FCSA3-2B/C-62A/B that had been previously inspected and accepted by ZPMC QC. The indication is located in West Shaft, Lift 3, Skin C.



### Applicable reference:

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5-2002 Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks”

**Who discovered the problem:** Hiranch Patel

**Name of individual from Contractor notified:** Steve Lawton

**Time and method of notification:** E-mail; 05-04-2009, 9:00

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Name of Caltrans Engineer notified:** Scott Kennedy  
**Time and method of notification:** Verbal; 05-04-2009, 9:00  
**QC Inspector's Name:**  
**Was QC Inspector aware of the problem:**                      Yes      No  
**Contractor's proposal to correct the problem:**

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Sinevod,Serge	ASMR
<b>Reviewed By:</b>	Wahbeh,Mazen	SMR

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## NCR PROPOSED RESOLUTION

**To:** CALTRANS - SAS Superstructure  
333 Burma Road  
Oakland CA 94607

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000226

**Subject:** NCR No. ZPMC-0234

**Dated:** 20-May-2009

**Contract No.:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000230 Rev: 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC has generated an internal NCR for this nonconformance, repaired and re-inspected the welds as required. ZPMC has generated an internal NCR for this nonconformance, repaired and re-inspected the welds as required. Attached is documentation of work performed regarding this NCR. ZPMC requests this NCR be closed

**Submitted by:**

**Attachment(s):** ABF-NPR-000230R00

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**Caltrans' comments:**

**Status:** REJ

**Date:** 27-May-2009

The proposed resolution is not acceptable. There is no attached documentation of the work performed as stated in the NPR.

Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences of the recurring issues regarding magnetic particle testing. Also, provide documentation of the weld repairs that were performed and that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0234 at that time.

**Submitted by:** Wright, Doug

**Date:** 27-May-2009

**Attachment(s):**

## NCR PROPOSED RESOLUTION

**To:** CALTRANS - SAS Superstructure  
333 Burma Road  
Oakland CA 94607

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000226

**Subject:** NCR No. ZPMC-0234

**Dated:** 08-Jun-2009

**Contract No.:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000230 Rev: 01

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**Contractor's Proposed Resolution:**

**Reference Resolution:** Attached is documentation regarding this NCR. ZPMC requests closure of this NCR.  
Attached is documentation regarding this NCR. ZPMC requests closure of this NCR.

**Submitted by:**

**Attachment(s):** ABF-NPR-000230R01;

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**Caltrans' comments:**

**Status:** REJ

**Date:** 11-Jun-2009

The proposed resolution is not acceptable. The proposed resolution did not address what steps were taken by the Quality Control Manager (QCM) to prevent future occurrences of this recurring issue as requested in both the Non-Conformance Transmittal (NCT-226) and the response to NPR-0230R00.

Provide documentation of the steps taken by the QCM to prevent future occurrences of the recurring issues regarding magnetic particle testing. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0234 at that time.

**Submitted by:** Wright, Doug

**Date:** 11-Jun-2009

**Attachment(s):**

	<h1 style="margin: 0;">探伤申请表</h1> <h2 style="margin: 0;">APPLICATION FORM FOR NDT</h2>	产品名称 NAME OF PRODUCT  美国海湾大桥
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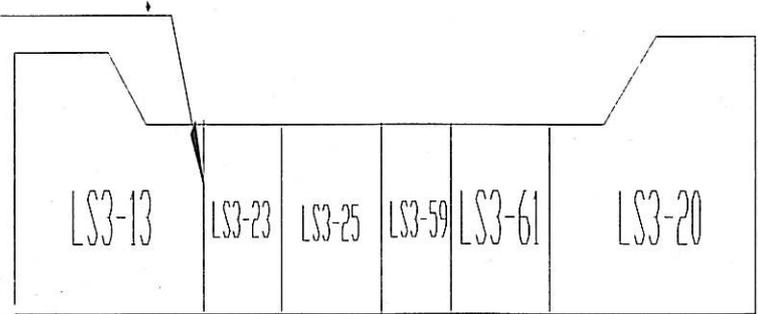
零部件图号 Drawing No	WSD1-FCSA3-2B/C	探伤类别 Test type	MT25%	编号 No	ZP06-787
零部件名称 Items	西塔第三吊装段 C3 纵向筋	材料 Material	A709M-345T2-Z	数量 Quantit	-

序号 No.	探伤编号 NDT No.	焊缝类型 Weld type	板厚/直径 thickness/diameter	焊工姓名 Welder name	焊工编号 Welder No.	结论 Result	备注 remark
1	WSD1-FCSA3-2B/C-62A	B	70*70*460	Yangmeigui	042195	✓	
2	WSD1-FCSA3-2B/C-62B	B	70*70*460	Yangmeigui	042195	✓	
3							

ZPMC - 0234  
 UT/MT final  
 reports.

探伤位置图  
 Scheme showing the test part

WSD1-FCSA3-2B/C-62A(62B)



注: 盖面焊, 括号内为背面焊缝

- 备注:
- 焊后
  - 校火后
  - WR/CWR 碳刨后  
WR/CWR NO: \_\_\_\_\_
  - WR/CWR 返修后  
WR/CWR NO: \_\_\_\_\_
  - SPCM
  - 其它  
焊接方法 SAW \_\_\_\_\_
  - \_\_\_\_\_  
车间位置 H2

申请人 Applicant	赵毛毛 陈洪平	日期 Date	09.05.06	主探者 Inspected by	日期 Date	2009.05.06
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REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 T787-MT-4112      DATE日期 2009.05.06      PAGE OF页码 1/1      Revision No: 0

PROJECT NO. 工程编号: ZP06-787      CONTRACTOR: 用户: CALTRANS

DRAWING NO. 图号: WSD1-FCSA3-2B/C THIRD LIFTING TOWER(W) SKIN C      CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4

REFERENCING CODE 参考规范编码: AWS D1.5-2002      ACCEPTANCE STANDARD 接受标准: AWS D1.5-2002      PROCEDURE NO. 程序编号: ZPQC-MT-01      CALIBRATION DUE DATE 仪器校正有效期: Dec. 28<sup>ST</sup>, 2009

EQUIPMENT 设备: MT YOKE      MANUFACTURER 制造商: PARKER      MODEL NO. 样式编号: B310S      SERIAL NO. 连续编号: 5620 5395 5617

MAGNETIZING METHOD 磁化方法: Continuous magnetic yoke 磁轭式连续法      CURRENT 电流: AC

PARTICLE TYPE 磁粉类型: Dry magnet powder 干磁粉      YOKE SPACING 磁轭间距: 70~150mm

MATERIAL TO BE EXAMINED 检测材料:  WELDING 焊接件      Material & thickness 母材,厚度: A709M-345T2 70mm  
 CASTING 铸件  
 FORGING 锻造

WELDING PROCESS 焊接方法: SAW      TYPE OF JOINT 焊缝类型: BUTT JOINT

WELD I.D. 焊缝编号	DISCONTINUITY不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
WSD1-FCSA3-2B/C-62A				ACC.		100%MT
WSD1-FCSA3-2B/C-62B				ACC.		100%MT

BLANK


EXAMINED BY主探: *[Signature]*      REVIEWED BY审核: *[Signature]* 2009.05.06  
 LEVEL-II SIGN 签名 / DATE日期: 09-05-06      LEVEL-II SIGN / DATE日期:  
 质量经理 / QCM      用户CUSTOMER  
 签字 SIGN / 日期 DATE      签字 SIGN / 日期 DATE

## NCR PROPOSED RESOLUTION

**To:** CALTRANS - SAS Superstructure  
333 Burma Road  
Oakland CA 94607

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000226

**Subject:** NCR No. ZPMC-0234

**Dated:** 16-Oct-2009

**Contract No.:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000230 Rev: 02

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### Contractor's Proposed Resolution:

**Reference Resolution:** ABFJV QCM has implemented training with ZPMC to improve the quality of inspections. ABFJV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training.

Caltrans' comments to ABF-NPR-000230R00 requested steps taken by ABFJV QCM to prevent future occurrences of missed indications. ABFJV QCM has implemented training with ZPMC to improve the quality of inspections. ABFJV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training. Topics to be covered during the instruction are: inspection of equipment prior to use, proper conditions for inspection, proper technique for MT, and UT. In addition, ABFJV has committed to perform overchecks in both the Tower and OBG. This will serve two purposes, first to monitor if the training is effective at reducing the number of missed indications and second to ensure missed indications are prevented.

Documentation supporting successful removal of this indication by grinding and NDT results specific to this non conformance (ZPMC-0234) is attached.

**Submitted by:**

**Attachment(s):** ABF-NPR-000230R02;

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**Caltrans' comments:**

**Status:** AAP

**Date:** 18-Oct-2009

The response is acceptable. However, the Department will consider closure of this NCR (ZPMC-0234) once all the training documents are submitted and reviewed.

**Submitted by:** Lee, Ken

**Date:** 18-Oct-2009

**Attachment(s):**



No. T-051

## LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2009-9-07-

REGARDING: NCR-000320(ZPMC-0294); NCR-000260(ZPMC-0234)

ZPMC received NCR-000320(ZPMC-0294) and NCR-000260(ZPMC-0234), they mentioned that CT inspector discovered an approximately 30mm length linear indication on Lift 1 North Tower Skin A weld, and an approximately 7mm length linear indication on Lift 3 West Tower Skin C weld, which were previously tested and accepted by ZPMC. The relational welds were NSD1-SA33A/F-11, WSD1-FCSA3-2B/C-62A/B.

ZPMC acknowledged this problem, and already put forward ZPMC's NCR-T-052 and NCR-T-045. As a result, ZPMC had removed the indications and repair them, then finally performed re-inspection by MT. Also these welds were re-inspected by CT inspector and green tagged. In order to avoid such problem occurs again ZPMC will perform NDT work according to related procedures strictly, and enhance QC be more responsible. Here attached the VT and MT Reports to prove the welds are perfect after repairing.

So ZPMC hope Caltrans could have a review and consider close these two NCRs.

ATTACHMENT:

ZPMC's NCR-T-052

NCR-000320(ZPMC-0294)

T787-MT-4559

ZPMC's NCR-T-045

NCR-000260(ZPMC-0234)

T787-MT-5771

*Zhu Shuangbo*

*2009.9.7*



# Nonconformance Report

## 不符合项报告

Project Name: S.F.O.B.B  
 项目名称: 美国加州海湾大桥  
 NCR Number:  
 NCR 编号: NCR-T-052 (ZPMC-0294)

Item: miss MT linear indication  
 名称描述: MT 漏检  
 Item Number:  
 件号:  
 North shaft lift 1  
 Skin A Plate Weld  
 Drawing: 图号:  
 NSD1-SA33A/F-11

Location: bay 10  
 位置: 10#车间  
 Date:  
 日期: 2009-06-17

Description of Nonconformance: 不符合项状态描述:  
 CT inspector discovered an approximately 30mm long linear indication during random verification Magnetic Particle Testing of North Tower, Lift 1, Skin A plate weld NSD1-SA33A/F-11. This weld was previously tested and accepted by ZPMC QC MT technicians.  
 Special Provisions Section 8.3: Quality Control shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.  
 AWS D1.5-2002, Section 6.26.2: Welds that are subject to MT in addition to visual inspection shall have no cracks.  
 CT 检验员在对北一 A 面电器孔焊缝 NSD1-SA33A/F-11 进行 MT 复探时发现了 30mm 长的线性缺陷。  
 根据标书规定: 承包方有必须对焊缝做好检验工作以保证焊缝符合标书和工艺文件的要求; 根据 AWS 规定: 除目检之外进行 MT 检测的焊缝严禁有裂纹。

Work By: L.L. Ming Prepared by: Zhang Junduo Reviewed by QCE:  
 施工方: 2009.06.17 准备: 2009.06.17 质量工程师批准:  
 Drawing Error  Material Defect  Fabrication Error  Other  
 图纸错误 材料缺陷 制作错误 其他原因

Disposition:  Use as is  Repair  Reject  
 处理措施: 回用 返修 拒收

Recommendation:  
 建议: 复检确认是否返修.  
Re-inspection and repair it if it affirms.

Prepared by: L.L. Ming Approved by QCA: \_\_\_\_\_  
 准备: 2009.06.17 质量经理批准

Reason for Nonconformance:

不符合原因:

线性缺陷没有检测出。  
Linear indication wasn't been inspected.

Prevention of Re-occurrence:

预防措施:

加强专业学习, 加强现场监督。  
Enhance professional learning and supervision on-site.

Approved by/批准: L. Liang 2009.9.6.

Technical Justification for Use-As-Is/Repair:

Attachment

Non-attachment

回用或返修的技术依据:

附件

无附件

Reviewed /批准: \_\_\_\_\_

Verification:

Acceptable

Unacceptable

确认:

可接受

不可接受

Verified by QCI/质检确认: \_\_\_\_\_

Reviewed by QCA/质检主任审核: \_\_\_\_\_

#R787-QCP-1300



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge  
 333 Burma Road  
 Oakland CA 94607  
 Tel: Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

**To:** AMERICAN BRIDGE/FLUOR, A JV  
 375 BURMA ROAD  
 OAKLAND CA 95607

**Date:** 16-Jun-2009

**Contract No:** 04-0120F4  
 04-SF-80-13.2 / 13.9

**Dear:** Mr. Charles Kanapicki  
**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Subject:** NCR No. ZPMC-0294

**Job Name:** SAS Superstructure  
**Document No:** 05.03.06-000283

**Reference Description:** Linear Indication (MT) / North Shaft Lift 1 / Skin A Plate Weld

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

**Material Location:** Tower **Lift:** 01

**Remarks:**

QA discovered an approximately 30mm long linear indication during random verification Magnetic Particle Testing (MT) of North Tower, Lift 1, Skin A plate weld NSD1-SA33A/F-11. This weld was previously tested and accepted by ZPMC QC MT Technicians.

Special Provisions Section 8.3 – "Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents."

AWS D1.5-2002, Section 6.26.2 – "Welds that are subject to MT in addition to visual inspection shall have no cracks."

**Action Required and/or Action Taken:**

Propose a resolution for this systematic non-conformance that addresses the failure of Quality Control to identify the linear indication (MT). Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control failure, propose a resolution for the identified material/workmanship non-conformance, documenting that the repaired weld is in compliance with the contract requirements.

Recent failures by Quality Control to identify linear indications have resulted in the issuance of NCR ZPMC-0212, ZPMC-0216, ZPMC-0231, ZPMC-0223, ZPMC-0234, ZPMC-0235, ZPMC-0291 and ZPMC-0293 related to Tower and ZPMC-0244, ZPMC-0245, ZPMC-0258, ZPMC-0278, ZPMC-0279, ZPMC-0281, ZPMC-0285, ZPMC-0289 and ZPMC-0290 related to OBG.

**Transmitted by:** Scott Kennedy Sr. Bridge Engineer  
**Attachments:** ZPMC-0294

**cc:** Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

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NCT

(Continued Page 2 of 2)

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File: 05.03.06

**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF ENGINEERING SERVICES**  
 Office of Structural Materials  
 Quality Assurance and Source Inspection



Bay Area Branch  
 690 Walnut Ave. St. 150  
 Vallejo, CA 94592-1133  
 (707) 649-5453  
 (707) 649-5493

Contract #: 04-0120F4  
 Cty: SF/ALA Rte: 80 PM: 13,2/13.9  
 File #: 69.25B

**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT**

**Location:** Changxing Island, Shanghai, PRC

**Report No:** NCR-000320

**Prime Contractor:** American Bridge/Fluor Enterprises, a JV

**Date:** 15-Jun-2009

**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

**NCR #:** ZPMC-0294

**Type of problem:**

Welding  Concrete  Other

Welding  Curing  Procedural  **Bridge No:** 34-0006

Joint fit-up  Coating  Other  **Component:** North Tower, Lift 1

Procedural  Procedural  **Description:** Missed MT indication on North Tower, Lift 1

**Reference Description:** Missed MT indication on North Tower, Lift 1, Skin A plate weld

**Description of Non-Conformance:**

QA discovered an approximately 30mm long linear indication during random verification Magnetic Particle Testing (MT) of North Tower, Lift 1, Skin A plate weld NSD1-SA33A/F-11. This weld was previously tested and accepted by ZPMC QC MT Technicians.



**Applicable reference:**

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5-2002, Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

**Who discovered the problem:** Dhanasingh Sukanthan

**Name of individual from Contractor notified:** Liu Cheng

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Time and method of notification:** 6/15/09, 13:45; Verbal

**Name of Caltrans Engineer notified:** Scott Kennedy

**Time and method of notification:** 6/16/09, 8:00; Verbal

**QC Inspector's Name:** Lu Yang

**Was QC Inspector aware of the problem:**  Yes  No

**Contractor's proposal to correct the problem:**

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

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**Inspected By:** Sinevod,Serge

ASMR

**Reviewed By:** Wahbeh,Mazen

SMR



## REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 T787-MT-4559		DATE 日期 2009.06.16		PAGE OF 页码 1/2	Revision No: 0	
PROJECT NO. 工程编号: ZP06-787			CONTRACTOR: 用户: CALTRANS			
DRAWING NO. 图号: NSD1-SA33A/F 1ST LIFTING TOWER(N) SKIN A			CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4			
REFERENCING CODE 参考规范编码 AWS D1.5-2002	ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002	PROCEDURE NO. 程序编号 ZPQC-MT-01	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 <sup>ST</sup> , 2009			
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5620 5395 5617			
MAGNETIZING METHOD 磁化方法	Continuous magnetic yoke 磁轭式连续法	CURRENT 电流	AC			
PARTICLE TYPE 磁粉类型	Dry magnet powder 干磁粉	YOKE SPACING 磁轭间距	70~150mm			
MATERIAL TO BE EXAMINED 检测材料	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材, 厚度	A709M-345T2-Z 50/70/8mm			
WELDING PROCESS 焊接方法	FCAW	TYPE OF JOINT 焊缝类型	T-JOINT			
WELD I.D. 焊缝编号	DISCONTINUITY 不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
NSD1-SA33A/F-1				ACC.		10%MT
NSD1-SA33A/F-3				ACC.		10%MT
NSD1-SA33A/F-4				ACC.		10%MT
NSD1-SA33A/F-6				ACC.		10%MT
NSD1-SA33A/F-5				ACC.		10%MT
NSD1-SA33A/F-7				ACC.		10%MT
NSD1-SA33A/F-8				ACC.		10%MT
NSD1-SA33A/F-9				ACC.		10%MT
NSD1-SA33A/F-10				ACC.		10%MT
NSD1-SA33A/F-42				ACC.		10%MT
NSD1-SA33A/F-43				ACC.		10%MT
NSD1-SA33A/F-44				ACC.		10%MT
NSD1-SA33A/F-45				ACC.		10%MT
EXAMINED BY 主操 Gu Yunwu <i>Gu Yunwu</i>			REVIEWED BY 审核 <i>Xu Hai</i>			
LEVEL - II SIGN 签名 / DATE 日期 <i>09.06.16</i>			LEVEL-II SIGN / DATE 日期 <i>09.06.16</i>			
质量经理 / QCM <i>Lu Jianhua</i> 2009.06.24			用户 CUSTOMER			
签字 SIGN / 日期 DATE			签字 SIGN / 日期 DATE			





# Nonconformance Report

## 不符合项报告

Project Name: S.F.O.B.B 项目名称: 美国加州海湾大桥		NCR Number: NCR 编号: NCR-T-045 (ZPMC-0234)
Item: MT 漏检 名称描述: Missed MT indication	Item Number: 件号: West Tower Lift 3 Skin C	Drawing: 图号: WSD1-FCSA3-2B/C-62A/B
Location: bay 11 位置: 11#车间	Date: 日期: 2009-06-10	

### Description of Nonconformance: 不符合项状态描述:

During random verification MT of West Tower Lift 3 Skin C welds, CT QA discovered a 7mm long indication on weld WSD1-FCSA3-2B/C-62A/B. This weld was previously tested and accepted by ZPMC MT technicians.

According to the Special Provisions Section 8.3: The contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure the materials and workmanship conform to the requirements of the contract documents.

AWS D1.5 Section 6.26.2: Welds that subject to MT inspection in addition to visual inspection shall have no cracks.

加州检验员对 ZPMC MT 探伤合格的焊缝: 西塔第三吊装段 C 面板焊缝 WSD1-FCSA3-2B/C-62A/B 进行 MT 复探时发现了长为 7mm 的缺陷。

根据标书规定: 承包方有必须对焊缝做好检验工作以保证焊缝符合标书和工艺文件的要求; 根据 AWS 规定: 除目检之外, 进行 MT 检测的焊缝严禁有裂纹。

Work By: Li Liming Prepared by: Zhang Jindan Reviewed by QCE: Zhang Huangbao  
 施工方: 2009.6.10 准备: 2009.6.10 质量工程师批准: 6-10

Drawing Error     Material Defect     Fabrication Error     Other  
 图纸错误                      材料缺陷                      制作错误                      其他原因

Disposition:                       Use as is                       Repair                       Reject  
 处理措施:                      回用                      返修                      拒收

### Recommendation:

建议:

复检, 打磨去除.

Re-inspection and remove by grinding.

Prepared by: Li Liming Approved by QCA: \_\_\_\_\_  
 准备: 2009.6.10 质量经理批准

Reason for Nonconformance:

不符合原因:

裂纹没有检出.  
Discover defect.

Prevention of Re-occurrence:

预防措施:

加强焊缝端头检测, 提供足够照明,  
提高焊工技术.

Enhance inspection on end of welding and enhance light  
to improve technology.

Approved by/批准: C. Z. Wang 06.01

Technical Justification for Use-As-Is/Repair:

Attachment

Non-attachment

回用或返修的技术依据:

附件

无附件

Reviewed /批准: \_\_\_\_\_

Verification:

Acceptable

Unacceptable

确认:

可接受

不可接受

Verified by QCI/质检确认: \_\_\_\_\_

Reviewed by QCA/质检主任审核: \_\_\_\_\_

#R787-QCP-1300



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge

333 Burma Road  
Oakland CA 94607

Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV  
375 BURMA ROAD  
OAKLAND CA 95607

Date: 05-May-2009

Contract No: 04-0120F4  
04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki  
Attention: Mr. Thomas Nilsson Project/Fabrication Manager  
Subject: NCR No. ZPMC-0234

Job Name: SAS Superstructure

Document No: 05.03.06-000226

Reference Description: Linear Indication (MT) / Quality Control / Tower West Shaft Lift 3

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Tower

Lift: 03

Remarks:

QA discovered a 7mm long linear indication in weld WSD1-FCSA3-2B/C-62A/B that had been previously inspected and accepted by ZPMC QC. The indication is located in West Shaft, Lift 3, Skin C.

Action Required and/or Action Taken:

Propose a resolution for this systematic non-conformance that addresses the failure of Quality Control to identify the linear indication (NDT). Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control failure, propose a resolution for the identified material/workmanship non-conformance, documenting that the repaired weld is in compliance with the contract requirements.

Recent failures by Quality Control to identify linear indications have resulted in the issuance of NCR ZPMC-0212, ZPMC-0216, ZPMC-0231 and ZPMC-0223.

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0234

cc: Rick Morrow, Gary Pursell, Mark Woods, Jason Tom

File: 05.03.06

02:02:15.04  
05.03.06-000226,NCT

Received  
NCT-000226 05 May 09 Page 1 of 1

**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF ENGINEERING SERVICES**  
 Office of Structural Materials  
 Quality Assurance and Source Inspection

Bay Area Branch  
 690 Walnut Ave. St. 150  
 Vallejo, CA 94592-1133  
 (707) 649-5453  
 (707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, PRC

Report No: NCR-000260

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 04-May-2009

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0234

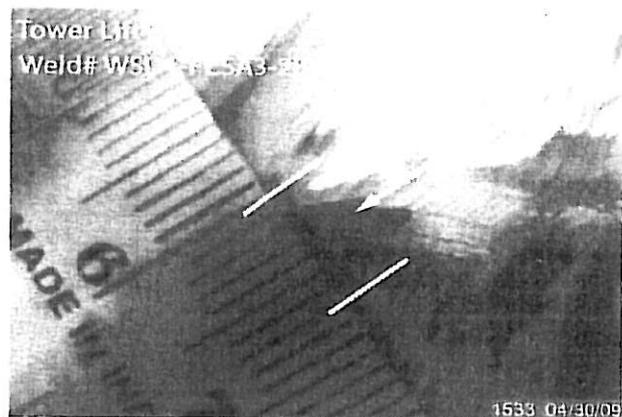
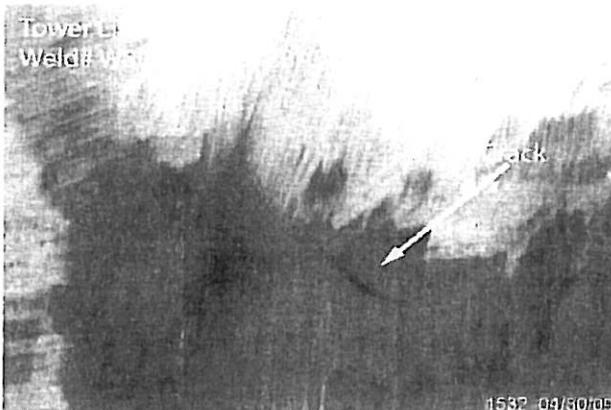
### Type of problem:

Welding  Concrete  Other Welding  Curing  Procedural  Bridge No: 34-0006Joint fit-up  Coating  Other  Component: West Shaft, Lift 3, Skin CProcedural  Procedural  Description: West Shaft, Lift 3, Skin C; Missed MT indication

Reference Description: West Shaft, Lift 3, Skin C; Missed MT indication

### Description of Non-Conformance:

QA discovered a 7mm long linear indication in weld WSD1-FCSA3-2B/C-62A/B that had been previously inspected and accepted by ZPMC QC. The indication is located in West Shaft, Lift 3, Skin C.



### Applicable reference:

Special Provisions Section 8.3 – "Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents."

AWS D1.5-2002 Section 6.26.2 – "Welds that are subject to MT in addition to visual inspection shall have no cracks"

Who discovered the problem: Hiranch Patel

Name of individual from Contractor notified: Steve Lawton

Time and method of notification: E-mail; 05-04-2009, 9:00

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Name of Caltrans Engineer notified:** Scott Kennedy

**Time and method of notification:** Verbal; 05-04-2009, 9:00

**QC Inspector's Name:**

**Was QC Inspector aware of the problem:**       Yes  No

**Contractor's proposal to correct the problem:**

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

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**Inspected By:** Sinevod,Serge

ASMR

**Reviewed By:** Wahbeh,Mazen

SMR

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# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 T787-MT-5771      DATE日期 2009.09.07      PAGE OF页码1/1      Revision No: 0

PROJECT NO. 工程编号: ZP06-787		CONTRACTOR: 用户: CALTRANS	
DRAWING NO. 图号: WSD1-FCSA3-2B/C THIRD LIFTING TOWER(W) C3 STIFFENER		CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4.	
REFERENCING CODE 参考规范编码 AWS D1.5-2002	ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002	PROCEDURE NO. 程序编号 ZPQC-MT-01	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 <sup>ST</sup> , 2009
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5620 5395 5617
MAGNETIZING METHOD 磁化方法	Continuous magnetic yoke 磁轭式连续法	CURRENT 电流	AC
PARTICLE TYPE 磁粉类型	Dry magnet powder 干磁粉	YOKE SPACING 磁轭间距	70~150mm
MATERIAL TO BE EXAMINED 检测材料	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材,厚度	A709M-345T2-Z 70mm
WELDING PROCESS 焊接方法	SAW	TYPE OF JOINT 焊缝类型	BUTT

WELD I.D. 焊缝编号	DISCONTINUITY不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
WSD1-FCSA3-2B/C-62A				ACC.		100%MT
WSD1-FCSA3-2B/C-63A				ACC.		100%MT
WSD1-FCSA3-2B/C-64A				ACC.		100%MT
WSD1-FCSA3-2B/C-65A				ACC.		100%MT
WSD1-FCSA3-2B/C-66A				ACC.		100%MT
WSD1-FCSA3-2B/C-62B				ACC.		100%MT
WSD1-FCSA3-2B/C-63B						*
WSD1-FCSA3-2B/C-64B						*
WSD1-FCSA3-2B/C-65B						*
WSD1-FCSA3-2B/C-66B						*

\* WSD1-FCSA3-2B/C-62A, WSD1-FCSA3-2B/C-63A, WSD1-FCSA3-2B/C-64A, WSD1-FCSA3-2B/C-65A, WSD1-FCSA3-2B/C-66A, WSD1-FCSA3-2B/C-62B were MT inspection and ACC, which is the result of required 25% MT.

\* WSD1-FCSA3-2B/C-62A, WSD1-FCSA3-2B/C-63A, WSD1-FCSA3-2B/C-64A, WSD1-FCSA3-2B/C-65A, WSD1-FCSA3-2B/C-66A, WSD1-FCSA3-2B/C-62B 焊缝经MT抽检合格, 且累积检测长度已经达到了此批要求的25%检测长度。

AFTER HSR1(T)-8444

EXAMINED BY 主探 <i>Guyun Wu</i>	REVIEWED BY 审核 <i>Wang Wei</i>
LEVEL - II SIGN 签名 / DATE日期 09.09.07	LEVEL-II SIGN / DATE日期 09.09.07
质量经理 / QCM <i>Wang Wei</i>	用户 CUSTOMER
签字 SIGN / 日期 DATE 9.7	签字 SIGN / 日期 DATE



AMERICAN BRIDGE/FLUOR ENTERPRISES, a JV

375 Burma Road
Oakland, CA 94607
Telephone (510) 808-4600 Fax (510) 808-4601

NCR PROPOSED RESOLUTION

To: California Department of Transportation
333 Burma Road
Oakland, CA 94607
Attention: Pursell, Gary
Resident Engineer
Ref: 05.03.06-000226
Subject: NCR No. ZPMC-0234

Dated: 20-May-2009
Contract No.: 04-0120F4
04-SF-80-13.2/13.9
Job Name: Self-Anchored Suspension Bridge
Document No: ABF-NPR-000230 Rev: 0

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has generated an internal NCR for this nonconformance, repaired and re-inspected the welds as
ZPMC has generated an internal NCR for this nonconformance, repaired and re-inspected the welds as required. Attached is
documentation of work performed regarding this NCR. ZPMC requests this NCR be closed

Submitted By: Lawton, Steve
Attachment(s): ABF-NPR-000230R00

Status: REJ
Date: 27-May-2009

Caltrans' comments:

The proposed resolution is not acceptable. There is no attached documentation of the work performed as stated in the NPR.
Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences of the recurring issues
regarding magnetic particle testing. Also, provide documentation of the weld repairs that were performed and that the repairs were
acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0234 at that time.

Submitted By: Wright, Doug Date: 27-May-2009
Attachment(s): ABF-NPR-000230



## NCR PROPOSED RESOLUTION

**To:** CALTRANS - SAS Superstructure  
333 Burma Road  
Oakland CA 94607

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000226

**Subject:** NCR No. ZPMC-0234

**Dated:** 26-Oct-2009

**Contract No.:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000230 Rev: 03

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**Contractor's Proposed Resolution:**

**Reference Resolution:** The ABFJV QCM has conducted MT and UT training of ZPMC personnel to prevent future occurrences of missed indications. Attached is the agenda of the training conducted and roster of personnel

The ABFJV QCM has conducted MT and UT training of ZPMC personnel to prevent future occurrences of missed indications. Attached is the agenda of the training conducted and roster of personnel who attended. ZPMC requests closure of this NCR.

**Submitted by:**

**Attachment(s):** ABF-NPR-000230R03;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 26-Oct-2009

The proposed resolution is acceptable. The Department concurs that Non-Conformance ZPMC-0234 is closed.

**Submitted by:** Lee, Ken

**Date:** 26-Oct-2009

**Attachment(s):**

# Tool Box Training Agenda

**Subject:** MT Techniques

**Reason for Refresher Training:** Several CT NCR's for missed MT indications

**1. Safety**

- a. Safety Glasses
- b. Gloves (if required)
- c. Knee Pads
- d. Electrical shock

**2. Tools**

- a. Lighting
- b. MT Powder.                      Red for ambient,              Yellow for High Temperature.
- c. Powder Bulb
- d. Powder Blower
- e. MT Yoke condition

**3. Inspection Techniques**

- a. Lighting
- b. Position of body (distance of eyes to the weld surface)
- c. Application of Powder
- d. Continuous method
- e. Two directions
- f. Both sides of weld



**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, PRC**Report No:** NCS-000237**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 05-Aug-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0234**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b>
<b>Procedural</b>	<b>Procedural</b>	<b>Descriptor:</b>	

**Date the Non-Conformance Report was written:** 04-May-2009**Description of Non-Conformance:**

QA discovered a 7mm long linear indication in weld WSD1-FCSA3-2B/C-62A/B that had been previously inspected and accepted by ZPMC QC. The indication is located in West Shaft, Lift 3, Skin C.

**Contractor's proposal to correct the problem:**

Repair affected weld.

**Corrective action taken:**

The affected weld has been repaired and a NDT report indicating sound weld has been submitted. The weld has been verified by QA and green tagged.

To resolve the recurring failure for QC to detect MT indications, ABF has held verbal interviews with ZPMC QC and MT technicians on several occasions. ABF has requested ZPMC to provide an analysis of missed indications to determine if they can be traced to a personnel trend, such as an inspector, welder, or weld location. ABF has also informed ZPMC to ensure adequate lighting is provided during inspections. Tests have also been administered to ZPMC MT technicians to demonstrate their ability to detect MT indications.

**Did corrective action require Engineer's approval?** Yes No**If so, name of Engineer providing approval:****Date:****Is Engineer's approval attached?** Yes No**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

**Inspected By:** Sinevod, Serge

Quality Assurance Inspector

**Reviewed By:** Wahbeh, Mazen

QA Reviewer